Remarks

The Examiner has rejected claims 37-39, 43-45, and 47-48 under 35 U.S.C. §102(e) as anticipated by Chin et al. (U.S. Patent No. 6,197,599, issued 3/01, filed 7/98). Specifically, the Examiner states that Chin et al. teach both a method and apparatus for making micro arrays comprising "'two or more reagents' (e.g. 2 or more polynucleotides or polypeptides) and 'one or more barriers... wherein each portion is maintained at predefined positions... portions is adapted to be brought into contact with one or more predefined biological targets' in which the 'barrier' comprises a 'solid support' (e.g. uncoated or glass coated with a polymer i.e. polylysine and grids e.g. addresses)." The Examiner further states that Chin et al.'s "polymer arrays are then subjected to assay... which comprises the correspondece to and contacting of 'biological target(s)' (e.g. polypeptides) to the predefined reagent portions... It is noted that the reference teaches 'seeding and adhering biological targets' of claim 47 where the targets are non-cellular (e.g. protein) since contacting of the reference reagent to its target effectuate 'seeding and adhering' within the scope of the presently claimed invention... Similarly, the reference teaching of applying (in any manner) the reagent to its target meets 'the step of applying one or more conditions' (where conditions are open-ended: e.g. include physical/chemical/mechanical and other parameters) since such conditions would include not only the application but the temperature and/or physical parameters exercised by the reference procedure."

Furthermore, the Examiner rejected Applicant's previous argument for patentability, the argument regarding the dissociation of a portion of the reagents from the array to the target, was not commensurate in scope to the then claimed invention since the claims did not include the specific term dissociate.

In response, the Applicant respectfully traverses the Examiner's conclusions and offers the following

remarks. Although Chin et al. disclose a method for making arrays comprising two or more reagents; it does not disclose the method of claim 37, which includes the steps of designating an address to each of the biological targets. In the methods of Chin et al., the targets (different from the reagents immobilized on an array) are provided as a mixture and no address is designated for each of the targets.

In addition, Applicant has amended Claim 37 to include the term "dissociate". Chin et al. does not teach a method for bringing two or more reagents in contact with one or more biological targets in which at least a portion of the reagents dissociate from the array to the target.

Claim 37 is further amended to include "providing one or more biological targets on a target support". In the methods of Chin et al., the targets (different from the reagents immobilized on an array) are always provided in a solution.

The Examiner has rejected claims 37-39 and 43-49 under 35 U.S.C. §102(e) as anticipated by Sabatini (U.S. Patent No. 6,544,790, issued 4/03, filed 9/99). Specifically, the Examiner states that Sabatini teaches both a method and apparatus for making micro arrays comprising "'two or more reagents' (e.g. DNA/RNA: bottom of col. To top of col. 2) and 'one or more barriers... wherein each portion is maintained at predefined positions... portions is adapted to be brought into contact with one or more predefined biological targets' in which the 'barrier' comprises a 'solid support' (e.g. any 'flat surface' including slides made of glass which can be polymer coated e.g. with polylysine; or bottom of wells in multi0-welled plates: see col. 2)." The Examiner further states that Sabatini discloses "'providing one or more biological targets' which include cells grown on 'growth supports' and/or applied (seeded/adhered) to the DNA/RNA reagent while employing growth medium (DMEM)(e.g. see col. 4)." The Examiner further states that Sabatini discloses "the use of any transfection technique (e.g. see col. 1, especially lines 30-40) including elctroporation (e.g. electric pulse) as a condition to facilitate transfer (e.g. transfection) of the DNA/RNA into the target cell(s)."

The Examiner further rejected Applicant's argument that "Sabatini does not disclose providing one or more biological targets on a target support" by stating that "Sabatini reference clearly teaches the formation of immobilized (e.g., lawns of cells) cells for transfection".

The Examiner further rejected Applicant's argument that "Sabatini's eukaryotic cells adhere to the array in contrast to the subject invention in which at lease a portion of the reagents dissociate from the array to the target" by stating that "applicant's argument is not commensurate in scope to the presently claimed invention which does not claim dissociation of the reagent from the array to the target".

In response, the Applicant respectfully traverses the Examiner's conclusions and offers the following remarks. Applicant reserves the right to swear behind Sabatini.

Claim 37 is amended to include "providing one or more biological targets on a target support".

Sabatini discloses a method for making an array of a "DNA of interest" and method to plate eukaryotic cells onto the array. But Sabatini does not disclose providing one or more biological targets on a target support. The target support in the present invention is different from the support for arrays. In Sabatini's method, cell lawns are on the same support of that for DNA.

The Examiner has rejected claims 37-39, 43-45, and 47-48 under 35 U.S.C. §102(b) as anticipated by Shalon et al. (WO 95/35505). Specifically, the Examiner states that Shalon teaches both a method and apparatus for making micro arrays comprising "'two or more reagents' (e.g. 2 or more polynucleotides or polypeptides) and 'one or more barriers... wherein each portion is maintained at predefined positions... portions is adapted to be brought into contact with one or more predefined biological targets' in which the 'barrier' comprises a 'solid support' (e.g. uncoated or glass coated with a polymer i.e. polylysine and grids e.g. addresses)." The Examiner further states that Shalon's "polymer arrays are then subjected to assay which comprises the corresponded to and contacting of 'biological target(s)' (e.g. polynucleotides/polypeptides) to the predefined reagent portions... [i]t is noted that the reference teaches 'seeding and adhering biological targets' of claim 47 where the targets are non-celular (e.g. DNA/protein) since contacting of the reference reagent to its target effectuate 'seeding and adhering' within the scope of the presently claimed invention... [s]imilarly, the reference teaching of applying (in any manner) the reagent to its target meets 'the step of applying one or more conditions' (where conditions are open-ended: e.g. include physical/chemical/mechanical and other parameters) since such conditions would include not only the application but the temperature and/or physical parameters exercised by the reference procedure."

Furthermore, the Examiner states that Shalon et al. clearly teaches forming "addressable target arrays. Shalon clearly disclose the use of its microarrays in assays for bringing into contact with one or more biological targets. Applicant's argument is not commensurate in scope to the presently claimed invention which does not claim dissociation of the reagent from the array to the target.

In response, the Applicant respectfully traverses the Examiner's conclusions and offers the following remarks. Although Shalon discloses a method and apparatus for making microarrays, Shalon does not disclose the method of claim 37, namely, a method for bringing two or more reagents in contact with one or more

biological targets in which the method utilizes an array that is distinguished from Shalon's array and is used for a different purpose. Shalon et al. does not teach the steps of designating an address to each of the biological targets. The definition of "target" in Shalon et al. and in the present invention is different. The target array in Shalon et al. is equivalent to the reagent array in the present invention.

Applicant has amended Claim 37 to include the term "dissociate". Shalon et al.'s immobilized reagents remain on the array at all times throughout the assay in contrast to the subject invention in which at least a portion of the reagents dissociate from the array to the target.

In addition, Claim 37 is further amended to include "providing one or more biological targets on a target support". Shalon et al. did not teach to bring into contact of immobilized targets with immobilized reagents.

In summary, Applicant has amended the Claim 37 to include the term dissociate and to include "providing one or more biological targets on a target support". None of the references teaches the method of Claim 37.

Respectfully submitted,

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